FORM No. H.E. 443

DRILLING RECORD

SCHEME:- PIEMAN

LOCATION:- Delville Saddle.

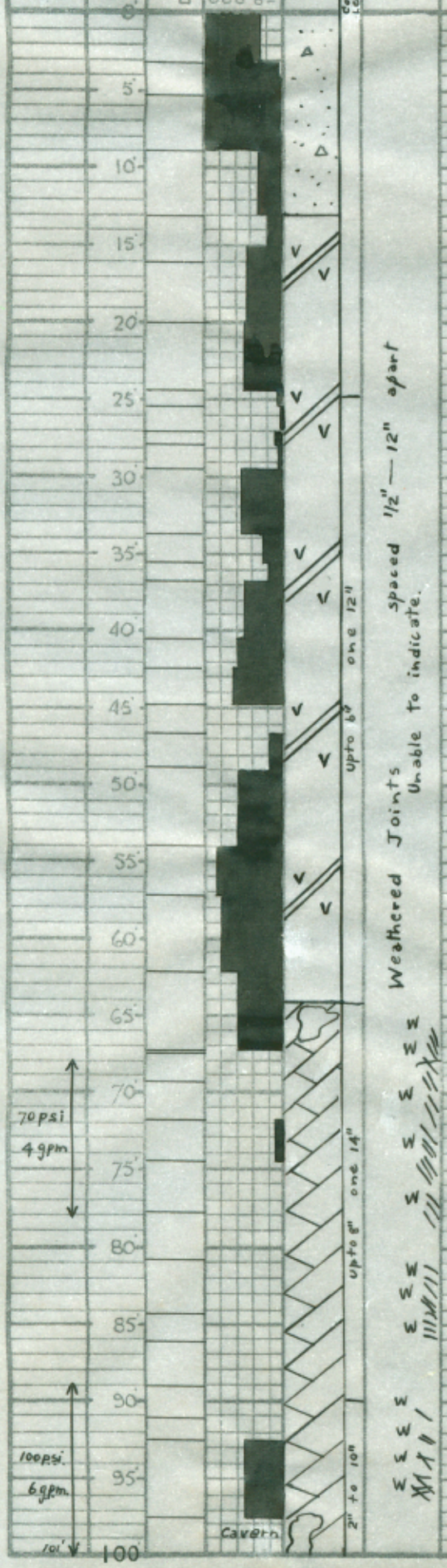
POSITION PLOTTED ON DRAWING No. S309863

DATES: (a) DRILLED: May'61 (b) WATER TABLE:

METHOD USED: D.D. DIAMETER: NM — AXT

SITE REMARKS: No 3 Saddle.

POSITION	CO-ORDINATES:	E:	N:	HOLE No. 6385
	ON LINE: W222/W223	BEARING: 0°00	AT CH:	
	FROM STN. W222	BEARING: 346°42'	DIST.: 22	FILE No.
LEVEL	SURFACE:	FORMATION:	WATER TABLE:	
	290'			
INCL.	HOLE DRILLED:	DEPRESSION ANG.:	INCL. BEARING:	SHEET 1 OF 5 SHEETS
	VERT/~~HOR/INC~~	90°		



REMARKS	
0'0" — 13'0" Brown clay + fine quartz sand	Soil and talus
13'0" — 24'5" Brown clay with white nodules of either clay or zeolite. Trace of residual joints.	Clay derived from weathered basalt.
24'5" — 62'6" Core shows fresh basalt upto 6" lengths with weathered joints. It appears that in drilling this harder rock, softer clay similar to above has been lost.	Basalt with weathered joints + zones.
62'6" — 67'4" Driller reports rods dropped 2' in this interval, cavern. Core shows 8" of black chert + 7" of grey dolomite This chert may be due to the baking of the dolomite by the basalt. Dolomite appears to come in at about 64' + is cavernous for 2' at least.	
67'4" — 101'2" light + dark grey dolomite with thin weathered joints spaced 1/2" — 9" apart, + showing solutional effects	Dolomite with some leakage + caverns in part.
At 86' Possible bedding ∠ 30° (Dip 60°)	
97'6" — 100'6" Rods washed down under own weight.	

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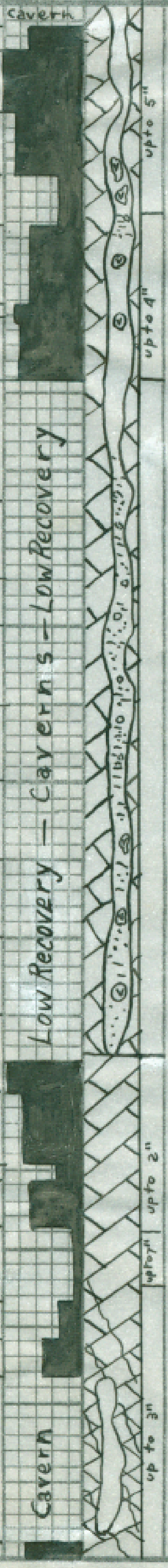
DRILLING RECORD

SCHEME:- PIEMAN	POSITION: CO-ORDINATES	E	N	HOLE No. 6385
LOCATION:- Delville Saddle	ON LINE W222/W223	BEARING 0°00'	AT CH	
POSITION PLOTTED ON DRAWING No. S309863	FROM STN. W 222	BEARING 346°42'	DIST 22'	FILE No.
DATES: (a) DRILLED: May '61 (b) WATER TABLE	LEVEL: SURFACE	FORMATION	WATER TABLE	
METHOD USED: D.D. DIAMETER: Nm — Axt	290'			
SITE REMARKS: No 3 Saddle.	INCL.: HOLE DRILLED	DEPRESSION ANG.	INCL. BEARING	SHEET 2 OF 5 SHEETS
	VERT ~~INCLINED~~	90°		

WATER PRESSURE TESTS	DEPTH	CORE DRAWN	RECOVERY (0.2 0.4 0.6 0.8 1.0)	GRAPHIC LOG	CORE LENGTHS	JOINTS	WATER	REMARKS



Water pressure tests: See sheet 1. Caverns, Loss of Water, no tests carried out. Water syphoning down hole (at 190').

Depth: 100, 105, 110, 115, 120, 125, 130, 135, 140, 145, 150, 155, 160, 165, 170, 175, 180, 185, 190, 195, 200

Remarks:

- Light grey deeply weathered dolomite } Dolomite (see sheet 1.)
- 101'2"–113'6" Dark grey basalt, fresh to deeply weathered.
- 113'6"–114'4" Brown residual basalt clay with basalt gravel, chert fragments, and quartz sand.
- 114'4"–119'4" Dark grey basalt, fresh to deeply weathered
- 119'4"–129'4" Dark grey basalt fresh to weathered with dark chert fragments

} Weathered basalt clay, boulders & quartz sand filling a cavern in dolomite.

- 129'4"–150'0" Light grey clay with quartz & limonite gravel upto 3/4"
- 145'–150' No core
- 146'–150' Rods washed down

} Sub-basaltic clay with some sand & fine gravel filling a cavern in dolomite.

- 150'0"–168'0" Dark grey basalt, fresh to weathered, botryoidal limonite & white chert in matrix of brown clay.
- 156'–160' Rods washed down
- 162'–164½' " " "
- 167'–168' " " "

} Weathered basalt clay, boulders and chert fragments, filling a cavern in dolomite.

- 168'0"–199'0" Light & dark grey dolomite with thin weathered joints 1"–8" apart. White chert at 173'. Some joints are closed & completely tight.
- Possible Bedding ∠35° (Dip 55°)
- 176'–179' Driller reports core appears to be grinding away.
- 182'–200' Badly broken core due to combined drilling & jointing
- 188'6"–199' cavern, water syphoning down hole. Water standing in hole from 192'–222'; Driller reports wet rods.

} Dolomite, leakage with caverns.

DRILLING RECORD

SCHEME:- PIEMAN
LOCATION:- Delville Saddle
POSITION PLOTTED ON DRAWING No S309863
DATES: (a) DRILLED: May '61 (b) WATER TABLE:
METHOD USED: D.D. DIAMETER: NM — AXT
SITE REMARKS: No 3 Saddle.

POSITION	CO-ORDINATES	E:	N:	HOLE No. 6385
	ON LINE W222 / WZ23	BEARING 0°00	AT CH:	
	FROM STN. W222	BEARING 346°42'	DIST. 22	FILE No.
LEVEL	SURFACE	FORMATION	WATER TABLE	
	290'			
INCL.	HOLE DRILLED	DEPRESSION ANG.	INCL. BEARING	SHEET 3 OF 5 SHEETS
	VERT/~~HORIZ~~	90°		

WATER PRESSURE TESTS	DEPTH	CORE DRAWN	RECOVERY 0.2 0.4 0.6 0.8 1.0	GRAPHIC LOG	JOINTS	WATER	REMARKS
	200			3'-6" Lengths	W		199'0"–222'6" Core shows 13" of light & dark grey dolomite. Driller reports water standing in hole from 192'–222'.
	205						203'–216' Rods washed down 216'–222'6" Rods washed down when turned by hand
	210			Cavern			Appears to be a cavern filled with soft material. — Dolomite, leakage with caverns
	215						
	220						
	225			up to 4" long		grey	222'6"–325'0" Light & dark grey dolomite with thin joints.
	230			up to 7" long			
100 psi 8.9 gpm	235			1"–6" long, two 10" long one 13"	Thin joints spaced 1"–13" apart, average 4" apart. In all sections angles 40°, 50°, and 70°.		Dolomite, leakage
	240						
	245					grey	
100 psi 1.4 gpm	250			3"–20" long, up to 2"			
	255						
	260				W		260'–481' Core broken in part due to drilling. There are harder chert phases which grind on the softer dolomite.
100 psi 0.8 gpm	265				W		
	270					grey	Dolomite, no leakage
100 psi 1.2 gpm	275			1"–8" long			
	280						
	285						
100 psi 1.8 gpm	290			1"–3" long, two 6" long	Thin joints 1"–6" apart average 3" apart. ∠s 20°, 40°, 50° 70°		
100 psi 0.4 gpm	295						
305' ↓	300					grey	

DRILLING RECORD

SCHEME:- PIEMAN

LOCATION:- Delville Saddle

POSITION PLOTTED ON DRAWING No: S309863

DATES: (a) DRILLED: May '61 (b) WATER TABLE:

METHOD USED: D.D. DIAMETER: Nm — AXT

SITE REMARKS: No 3 Saddle.

POSITION: CO-ORDINATES: E: N: HOLE No. 6385

ON LINE W222/W223 BEARING: 0°00 AT CH:

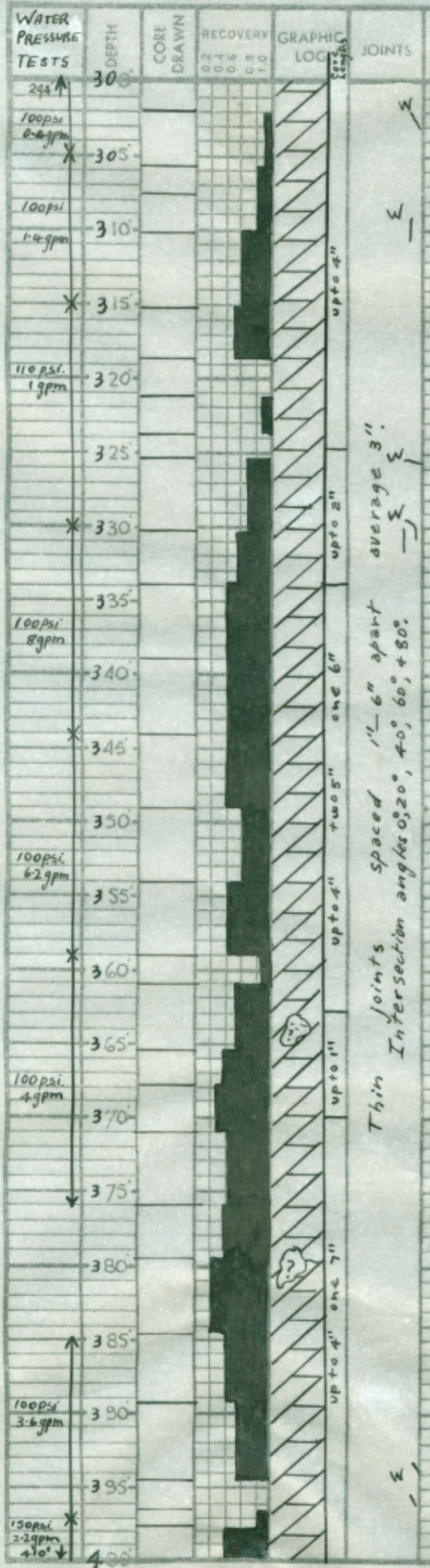
FROM STN. W222 BEARING: 346°42' DIST.: 22 FILE No.

LEVEL: SURFACE: FORMATION: WATER TABLE:

290'

INCL: HOLE DRILLED: DEPRESSION ANG.: INCL. BEARING: SHEET 4 OF 5 SHEETS

VERT/~~HORIZ~~: 90°



REMARKS

At 303' Partial loss of water return — Dolomite, no leakage

Dolomite, leakage

At 320' Complete loss of water return

At 328' Water returned then was lost again.

Water pressure tests suggest that water may be leaving the hole higher up.

325'-334' Driller reports rock drilled easily. Core shows evidence of grinding

325'0"-395'0" Light and dark grey dolomite with thin joints. Core loss is attributed in part to drilling and in part to softer material possibly filling caverns. Caving ground has also contributed to core loss & the broken nature of some of the core.

351' ∠ of bedding 27° (Dip 63°)

Dolomite, leakage and some possible caverns.

362' ∠ of bedding 66° (Dip 24°)

363'-365' Very soft, rods went down very easily

367' Caving
370' "
372' "

370' ∠ of bedding 45° (Dip 45°)

379'7"-381'7" Rods dropped

380'-381' caving

385' ∠ of bedding 27° (Dip 63°)

Dolomite, slight leachage in part.

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LOCATION:- Delville Saddle

POSITION PLOTTED ON DRAWING No. S309863

DATES: (a) DRILLED: May '61 (b) WATER TABLE:

METHOD USED: D.D. DIAMETER: NM – AXT

SITE REMARKS: No 3 Saddle.

POSITION				
CO-ORDINATES	E:	N:	HOLE No. 6385
ON LINE W222 / W223	BEARING 0°00	AT CH:	
FROM STN W222	BEARING 346°42'	DIST. 22'	FILE No.

LEVEL			
SURFACE	FORMATION	WATER TABLE	
290'			

INCL			
HOLE DRILLED	DEPRESSION ANG.	INCL. BEARING	SHEET 5 OF 5 SHEETS
VERT/~~HORIZ~~	90°		

WATER PRESSURE TESTS | DEPTH | CORE DRAWN | RECOVERY 0.2 0.4 0.6 0.8 1.0 | GRAPHIC LOG (Core Losses) | JOINTS | WATER

397'
150psi 2·2gpm
150psi 2 gpm
150psi 1·8gpm
150psi 1·6gpm
150psi 2·2gpm
160psi 1·2gpm
160psi 2 gpm

40 405 410 415 420 425 430 435 440 445 450 455 460 465 470 475 480 485 490 495 500

upto 4" | one 9" | two 6" | upto 5" | upto 3" | two 2" | upto 1" | upto 2" | upto 2" two 5" | upto 2" two 2" | upto 3"

Thin joints spaced 1"–7" apart average 4" Intersection angles 10° 30° 40° 70°

W

REMARKS

3950"–4811" Light and dark grey dolomite with cherty phases broken in part due to drilling.

427' ∠ of bedding 23° (Dip 67°)

437'–461' Driller reports soft drilling.

Dolomite, slight leachage in part.

Hole Completed at 4811"

Logged by R.P. Mather

D.E. Hansen May 1961